

"Environment protection guarantees new jobs"

The conservator society and environmental protection can mean new jobs and new efficiency for industry, according to Environment Minister George R. McCague.

Pollution control offers many industries an incentive to modernize operations, increase productivity and save through recycling usable wastes and energy conservation, he told the joint meeting of the Air Pollution Control Association, Ontario Section, and the Pollution Control Association of Ontario in Toronto.

"There are also tax advantages for installation of pollution control equipment, and the social advantages of being regarded as a good employer and a clean corporate citizen," Mr. McCague added.

Although full accurate statistics have not yet been compiled of the growth of environmental activity, Mr. McCague described it as being one of the fastest growing industries in North America over the past decade.

"Examined positively, the emerging conservator society promises to be an extremely creative, innovative and more efficient era, since the conservator society's ethic demands a reduction of energy consumption and material waste. New employment will result from the need for more energy efficient home heating and cooling systems, for new housing designs and construction materials, and for new goods that will be maintained, repaired or rebuilt to reverse our current trend to disposable products.

This new way of life will also create many new crafts, skills, technology and job opportunities.

"It will also lead to a cleaner environment," he said.

The Ministry's capital construction program for 1978/79 will materially contribute to the creation of numerous employment opportunities. Projects affecting 242 municipalities will be under active development with 67 of these in the construction phase.

Some \$18 million will be made available for up-front grants to municipalities as well as funds for the repair and renewal of private sewage disposal systems.

At the beginning of 1978-79, a direct grant plan will extend provincial assistance to municipally-owned sewage and water facilities.

"We have calculated that about 50 per cent of the total value of construction goes directly to labor costs, and each million dollars spent by Ontario generates 20 man-years of on-site employment.

"In addition indirect effects of expenditures for sewage and water works create an estimated 1.2 man-years in off-site employment. Thus, for every million spent for water and sewage works, 44 man-years of combined on-site and off-

site employment are created. On this basis, the Ministry's expected 1978/79 contribution of \$185 million to water and sewage works will support about 11,500 on-site and off-site man-years of employment.

"This figure does not include the further induced effects on employment, since for every construction worker there are additional persons employed in service industries, supported by the influx of wages," Mr. McCague said.

Industrial Waste Conference celebrates 25th anniversary

The Ontario Industrial Waste Conference is celebrating its Silver Anniversary this year with the staging of its annual sessions at the Prince Hotel, June 18-21. In 25 years the Conference, sponsored by the Ontario Ministry of the Environment, has achieved an international reputation for bringing together the leading experts in industrial waste abatement.

The idea for the OIWC was originated by the late A.V. Delaporte with Dr. A.E. Berry serving as the first conference chairman in 1954. Dr. Berry remained chairman until 1962, when Dave Caverly succeeded. Mr. Caverly chaired the Conference for ten years. K.H. Sharpe assumed the chairmanship in 1974 and resigned in 1977 to undertake new Ministry responsibilities. The current chairman for the Conference's 25th Anniversary is Dennis P. Caplice.

Since the first conference 25 years ago on the campus of the Ontario Agricultural College in Guelph, the conference has owed its great success to the contribu-

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Resource Recovery Centre to open Aug. 1st

Environment Minister George R. McCague (right) and deputy minister K.H. Sharpe (left) watch shredded waste flow along a conveyor as it is processed in Ontario's Centre for Resource Recovery. The \$15 million experimental recycling plant is in full operation producing shredded steel, paper, fuel supplements of shredded paper and plastic, compost and other materials from waste for development of new products and new energy supplies from waste. Official opening of the new plant is scheduled for August.

(photo: Bill Dodds)



See photos on page 8

tions of those presenting papers, the session chairman, the planning and technical program committees, and the interest of the conference delegates, some of whom have attended all 25 conferences.

As in the past 24 years, this year's conference subjects are in tune with current challenges. Topics of concern are economics and the environment, nuclear and toxic waste management and air and wastewater pollution control technologies. All of these themes are of vital concern to the industrial technologists, environmentalists and educators, registered for the Silver Anniversary Ontario Industrial Waste Conference.

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Car emissions spotchecked across Ontario

The Ontario Ministry of the Environment will be spot checking vehicles in 11 communities across Ontario this summer to make sure they comply with auto emission control requirements.

A.J. Harris, director of the Ministry's air resources branch, said the spot checks will continue until the end of the year. "A police officer directs cars off the road for a simple three or four minute test. Environment Ontario inspectors then analyze exhaust gases and perform an engine inspection."

In addition to the summer roadside spot checks, the Ministry works year-round visiting used car lots to inspect the cars for possible defects before they are sold.

"We check 12,000 vehicles each year," said Mr. Harris. "Nearly 60 per cent of these are faulty in some way. Drivers or owners of cars with faulty emission systems are given three weeks to remedy the problem."

Mr. Harris said five per cent of the cars tested showed signs of tampering with the emission equipment. "The drivers or owners of these vehicles risk fines of several hundred dollars and, despite popular belief, removing this equipment does not necessarily

improve gas mileage. Modern engines integrate the emission controls into the whole system. Any tampering just reduces the efficiency of the engine and may lead to excessive wear and costly repairs in the future."

He added that modern fuels are made for these cars. "Switching to

lead fuel when unleaded is recommended ruins the catalytic converter and fouls up engine parts. This may save money at the pumps but it eventually leads to poorer mileage and increased costs as well as excessive exhaust emission."

But the Ministry is not in busi-

ness to hand out fines and convictions, he said. Ample time is provided to correct problems before legal action is considered. Spot checks are designed to make sure cars don't over-pollute. "In this way the Ministry protects the environment as well as the driver."

The 1978 auto emissions spot checks scheduled to date are:

Toronto	June 19-23
Toronto	June 26-30
Chatham	July 10-14
Toronto	July 17-21
Toronto	July 24-28
Bradford	July 31-August 4
Burlington	August 14-18
Toronto	August 21-25
Whitby	August 25-Sept. 1
St. Catharines	September 11-15
Toronto	September 18-22
Toronto	September 25-29
Toronto	October 2-6

Mosquito self defence combats encephalitis

The Ontario Government is continuing its mosquito control program in co-operation with municipalities in southern and southwestern Ontario to curb St. Louis encephalitis, Environment Minister George McCague and Health Minister Dennis Timbrell announced.

After an outbreak of mosquito-borne encephalitis in 1975 affecting 67 Ontario residents, Health and Environment officials designated the area south of an imaginary line between Toronto and Sarnia as a high-risk area and began municipal mosquito control and public education programs to reduce the threat from the virus.

"Last year, weather conditions,

provincial-municipal programs, and protective measures taken by concerned citizens reduced the mosquito population," said Mr. McCague. "Homeowners have contributed substantially to the decrease."

"The number of confirmed cases of St. Louis encephalitis was greatly reduced from 67 and five related deaths in 1975 to four cases and no fatalities in 1976, and no reported cases in 1977," said Mr. Timbrell. "Municipal assistance in the high-risk area is required again this year to minimize the potential health hazard. Direct action by homeowners is even more important."

Mr. McCague said that mosquito control around the home should begin immediately.

A pamphlet available from local Health and Environment Ministry offices and through local health units explains how to control mosquitoes at home. The publication offers advice on eliminating insect breeding sites, using repellents and insecticides, and tips on avoiding mosquito bites.

To assist local boards of health and their municipalities in mosquito control programs, provincial subsidies are provided by the Health Ministry.

Environment Ontario's pesticide control section will again be

training and licensing municipal staff to use pesticides in controlling mosquitoes. A special part of this program is devoted to the location of mosquito larvae areas to eliminate the unnecessary use of pesticides.

"Mosquito-borne encephalitis is a major health concern in southern Ontario, but the improper or excessive use of pesticides could pose an even greater problem unless properly supervised by Ministry experts," said Mr. McCague. "Our input into the program is designed not only to save money and time for municipalities but to safeguard against any health or environmental damage due to the improper use of chemicals."

It's all one world...

Hormone eliminates Pharaoh's ants

A 15,000 square metre (150,000 sq. ft.) area in a British hospital heavily infested by Pharaoh's ants (Monomorium pharaonis) was completely cleared of the insects in 18 weeks in the first large-scale field test of insect baits containing the insect juvenile hormone analogue methoprene. Queens and the brood of this ant species were found in inaccessible wall cavities and heating ducts. Foraging worker-ants penetrated dressed wounds and sterile equipment, seriously endangering the health of the hospital's patients.

The analogue methoprene efficiently disrupted the development of the brood and induced sterility in the queens, completely halting egg laying.

The hormone mixture was applied in two baittings one week apart. The method uses no toxic chemicals and can be employed in high risk areas such as hospitals at a very low cost.

Defoliant poisons veterans

US Vietnam veterans who spent some time in areas sprayed by a defoliant, Agent Orange, containing TCDD, (also known as dioxin) are now reporting symptoms characteristic of those caused by the chemical.

Dr. Barry Commoner of Washington University, an expert in dioxin poisoning, stated that the chemical may have accumulated in the veterans' body fat during ex-

posure with no symptoms at the time. Ten years later the victims could become sick, lose weight and show other related symptoms as they break down fat and release the dioxin into their bodies. The process is very gradual, like radiation sickness, and is only reported when symptoms become very persistent.

The Acropolis saved

A few years ago UNESCO launched an appeal for funds to save the Acropolis and other unique monuments of ancient Greek culture, threatened at the time by the high level of sulphur dioxide in Athens air. The project would also have benefited the population of the city's centre where any increase in air pollution levels was feared to have significant health effects.

The high SO₂ level in the city's air was attributed to the high sulphur content of the oil used for heating.

Air pollution control programs instituted in Athens since have had a dramatic impact according to a recent report published by the World Health Organisation (WHO). Even in the most polluted part of the city SO₂ levels are now well below the criteria recommended by WHO as long term goals. In fact, the WHO report states, the level of SO₂ in central Athens during the 1977/78 heating period extending from mid-November to mid-January was 50 per cent lower than in corresponding heating periods in previous years.

Bikini islanders move again

Seven years after their return to Bikini, from which they were evacuated to make room for nuclear tests in 1946, the islanders' latest show abnormally high amounts of plutonium, strontium and cesium — all known carcinogens — in their bodies. The unexpected discovery has led officials of the US Department of Energy to announce plans to move the 100-odd natives to another island.

It seems that despite massive clean-up, including the removal of all topsoil and the planting of 50,000 new coconut trees, radiation still permeates the soil, plants and water. It will be another 40 to 50 years, one official said, before plant life will be safe. Water or any of the fruits growing on the island are still contaminated.

Computer program fights noise

A large number of unsynchronized, fluid-transmitted pressure pulses generated by the movement of pistons, gears and valves are the main causes of noisy hydraulic machinery, researchers found at Aston University in England. Helped by \$2.5 million from the British government they have devised a computer program that should help manufacturers of such equipment as earth movers, forklift trucks, tunnelling equipment

and similar machinery to make their products quieter.

The Aston computer program is the only one that concentrates on the design of the machine itself and on altering either the phases, pulses or casings of hydraulic equipment to achieve the desired result. The experts found that often minor design alterations of such machines could reduce their noise output by 5 to 10 dbA without loss of efficiency.

PBB poses puzzle

When in 1973/74 a number of Michigan farmers reported disease symptoms ranging from forgetfulness to diarrhea and chloracne, an intensive search for possible causes soon centered on a fire retardant, polybrominated biphenyl (PBB) the manufacturer had inadvertently mixed into cattle feed. Farms using such fodder were quarantined, cattle were destroyed, and a number of other measures were taken to prevent further pollution.

A study recently completed by the US Center for Disease Control (CDC) and the Michigan Department of Health, however, has led to a surprising conclusion: "No positive associations were found between serum concentrations of PBBs and reported symptom frequencies."

In the study some 3000 people with larger or lesser exposure to PBB — contaminated fodder were investigated. CDC reports: "Symptoms have occurred most frequently in volunteers and per-

sons with low level PBB contamination, and were least prevalent in farm families and chemical workers directly involved in PBB handling."

Despite these puzzling discoveries the Department of Public Health warns, that "exposure to PBBs may carry a potential risk of the later development of cancer, as PBB given in single high doses to rats has produced neoplastic liver nodules." In Ontario, PBBs have not been used since 1975.

How to rescue birds

After seven years of work with avian victims of oil spills the International Bird Rescue Research Center in Berkeley, Cal. has published a handbook entitled "Saving Oiled Seabirds" with numerous suggestions on the handling of stricken animals. "The degree of oiling has little impact on the chances of survival of the birds," write the authors. "The use of drugs such as antibiotics, tranquilizers and corticosteroids may do more harm than good."

It's important to keep the birds warm at all times, to recognize signs of lowered body temperature and to feed them regularly. It may take a few days before they can be washed with mineral oil and mild detergents. Decontaminated birds must also undergo a period of active swimming before release to give them a chance to re-waterproof their feathers.



Lake Odyssey:

Weed harvesting success story in Kawartha Lakes

Environment Ontario's weed harvesting program in selected Kawartha Lakes will continue this summer. Environment Minister George R. McCague announced in Peterborough, at a special screening of this Ministry's new documentary movie on the weed harvesting project.

The movie, "Lake Odyssey" directed by Irwin Karnick of Ennismore Township, documents the importance of the weed harvesting program undertaken by the Ministry in improving the recreational quality of the lakes and in seeking viable uses for the harvested plants.

"We undertook weed harvesting in the Kawarthas originally to provide immediate relief for these beautiful recreational lakes and as an experiment to develop improved procedures for controlling excessive aquatic growth," said Mr. McCague.

"Our experiments have been successful and we have improved the recreational quality here. The Kawarthas program has been pioneering work which could have important applications elsewhere — for example, in third world countries where they lack the facilities for making fertilizers."

Environment Ontario's 1978 weed harvesting program will center in Buckhorn and Chemung Lakes, Mr. McCague announced. About 880 acres of aquatic weeds will be harvested during the cutting period which begins June 15.

Kawartha Weed Control Limited has been awarded a contract determined by public tender for the

1978 harvest. Administrative work will be handled by Bio-System Limited of Guelph. Total cost of the 1978 project is \$150,000 with \$20,000 being provided by the federal government.

In the early 70s, water quality studies in the Kawarthas by the Ministries of Natural Resources and Environment indicated that both the fertility and shallow nature of the lakes provided an ideal environment for excessive aquatic growth.

To counteract the recreational deterioration of the Kawarthas and to serve as a pilot experimental project, Environment Ontario undertook a weed harvesting program in 1973 in southern Chemung

Lake. In 1976, the program was expanded to nearby lakes to control an invading plant species, "Eurasian Watermilfoil". Last year there was a major decrease of the plant in southern Chemung Lake and lesser reductions were also detected in Buckhorn and northern Chemung Lakes.

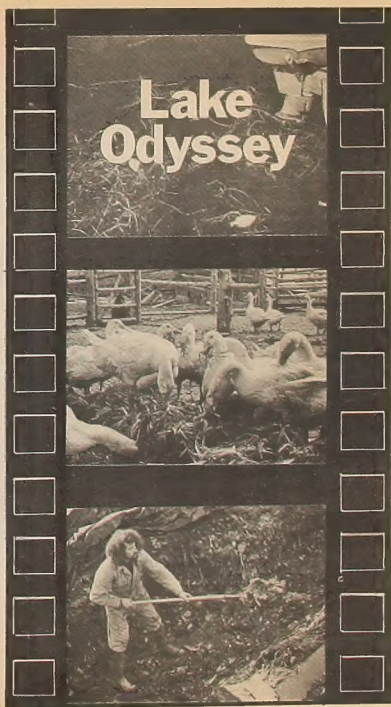
Weed harvesting in the Kawarthas was designed to rid the lakes of excessive weed growth to assess the environmental impact of the operation. Harvesting equipment was evaluated and experimentation was conducted into finding viable uses for the harvested vegetation. Vegetation has been tested as a food source for livestock and as a soil additive.



Ontario Environment Minister George McCague presents a copy of the film "Lake Odyssey" to Peterborough Mayor Cam Wasson

The weed harvester, developed by Environment Canada, will continue working in the Kawartha Lakes (top). On the lower right are a few stills from "Lake Odyssey". Plans are now under way to show the film in theatres across Canada.

(all photos: Hans Ejsenck)





Teaching about the

More than fifty special education teachers from across Ontario attended a three-day environmental studies workshop, April 28-30th, at the Bolton Outdoor Education Centre.

The seminar was sponsored by the Ontario Ministry of the Environment in keeping with its policy of encouraging and assisting school teachers in the use of environmental studies as supplement-





ing teachers to teach the environment

ary teaching tools in the total education process.

Most of the fifty-six men and women who attended the conference work with deaf, retarded, emotionally-disturbed and physically-handicapped children. Few have had formal environmental studies training. However, most of the teachers, such as Pierre Desjardins of North Bay and Ron Nutt from Timmins, felt that the

workshop gave them sufficient background to help them develop an environmental program with their exceptional students.

"Environmental studies provide so many benefits for handicapped children," said Jane Watson, educational resources co-ordinator for the Ministry and organizer of the conference. "A well-designed program improves a child's achievement in other school sub-

jects. It builds self-confidence, encourages interpersonal relationships and develops leisure skills for all youngsters, but especially for those with special needs."

The workshop featured a variety of sessions, including water, soil and energy studies, urban activities, language, arts and nature interpretation - all geared to bringing the out-of-doors to the exceptional child, regardless of his handicap.

Jim Learn, a teacher of mentally retarded children in Brantford, Ontario wrote to say "the workshop provided an opportunity to have some new ideas demonstrated and also to experience putting the ideas into action. The gentlemen who ran the sessions... were able to make the use of the outdoors a more attractive choice as a place to teach students."

"I have made use of some of the techniques that were shown to me in my classroom this week and found the results well worth the planning."

Heather Downes of Willowdale, said, "as a special education teacher from the Toronto Board of Education, I extended my appreciation for the outdoors. I also gained more confidence in how to introduce exceptional children to outdoor activities."

According to Mary Snetsinger, who works with physically handicapped children in Toronto, it was the "most creative, active and stimulating workshop I have ever attended... the weekend content was terrific... mind boggling... and will lead to more reading and research on my part... I've been motivated!"

Mary's reaction was typical of the enthusiasm and interest displayed by the special education teachers. Despite the cool weather, a number were found wading barefoot in the local stream during the aquatic study and almost half turned out for the optional early morning bird walk at 5:30 a.m.

More than 140 teachers applied for the course, but the number of participants was kept small to facilitate learning and to create a friendly, experience-sharing atmosphere.

Due to the positive response, the Ministry intends to run a similar workshop next spring. For further information, please write:

Educational Resources Co-ordinator,
Information Services Branch,
Ontario Ministry of the Environment,
135 St. Clair Avenue West,
Toronto, Ontario, M4V 1P5



The photos show (clockwise, starting at upper left): Paul Lindgreen of Milton, Ont., takes a closer look at nature; delegates and representatives of the Earth Systems Group, Orfield, Penna, exchange experiences at the end of the day; one of the delegates takes part in a stream study; Mr. Lindgreen and Donna Bockwell from Toronto investigate soil samples. Ms. Bockwell and other delegates examine aquatic habitats.

(photos: John Steele)



Environmental education . . .

with Jane Watson
Educational Resources Co-ordinator

Soil — the support of life

This soil study has been designed for students at the primary/intermediate level to make them aware of the various properties of soils and to provide them with a greater understanding of the importance of soil as a life supporting system.

The activity, while allowing the students to gain more knowledge about the soil, at the same time forces them to use their senses and increases their appreciation of their surroundings.

This study can be adapted to other age levels. For example, a more advanced soil study could involve determining the soil type of an unknown sample. Further testing of soil porosity, water holding capability, acidity, etc., will enable students to understand the different physical and chemical characteristics of each type.

The activity should be conducted in an outdoors setting with no more than 15 students working under one teacher. It should take approximately one hour.

Equipment

Newspaper, spoon, hand lens, soil samples from different areas

Procedure

1. Begin by handing each student a sheet of newspaper and a spoon. Instruct the students to choose an area either in a field, forest, or near a body of water, explain that it is necessary to obtain samples of soil from different areas to see if any differences may exist. The students should dig down several inches and gather three or four large handfuls of soil.
2. Upon returning with their soil, allow the students to examine the soil samples for at least fifteen minutes. A discussion can follow based on questions put forth by the teacher. The type of questions asked should require the students to observe the various properties of the soil. Ask students to draw and if possible write down the different things which they find in the soil.

Sample Questions

- A. What is the soil made of? Did you see anything that makes you think that the soil is made of these materials? (If children do not suggest that rock crumbles into soil, ask questions such as: what happens when you rub two stones together?) What causes the rock to break down into soil? Can you find any rocks which show signs of weathering? Are there any particles present? What are they? Were these particles

always this size or have they changed? If you think they have changed, how did this change occur? What else, other than rock is needed for soil?

(Answer: decaying leaves, wood, dead organisms are also needed.)

- B. Ask the students to describe what their soil looks like? How does it feel? Squeeze a handful of soil: compare the texture, the way the soil holds together. When you press a large piece of soil in your hand does it squash, or does it break up easily, or does it require more pressure? Why? What differences can you see between the different samples of soils? (Color, texture.) What do you think causes these differences?

- C. Smell the soil: Does it have a smell? What does it smell like? What do you think causes the soil to smell? Take a handful of soil from near the surface. Squeeze it, holding your hand near your ear as you do so. Do you hear anything? Describe what you hear.

- D. If you were going to make the very best possible soil for growing plants and trees, what would you put in it? Why? Are rock particles of any value to the soil? Why? Are animal particles of any value to the soil? Why? Are plant particles of any value to the soil? Why?

3. Further observations may be made by pouring water on soil and observing what happens. Was the water absorbed? How quickly? Why does water soak into some soils faster than others? If the water was not absorbed into the soil, where did it go? Did anything sink into the soil with the water?

The Soil Game

Separate the class into two groups (five to eight students in one group, the remaining students in the second group). Assign the title "clay particle" to about one-third of the individuals of the larger group. Assign the title "silt particle" to some individuals and "sand particle" to those remaining. The second group will become a "plant part," except for one or two students who will be the animals who live in the soil.

Place the "sand, silt, and clay particles" in a disorganized clump—individuals stand at arm length. Explain that the soil is mixed in this way; that space between the particles is filled with air, water, plant roots, organic material (decomposing), and animals. Will the soil be different, if most of the particles are clay? Or sand? A soil containing mostly clay is termed a fine-textured or clay soil, etc. All students hold their positions.

After this is understood, create a plant root by arranging the individuals of the small group (five or six) in a straight line, have them hold hands, and move apart until their arms are extended. The leader of this line represents the "growing point" of a plant root and he weaves his way through the spaces in the soil clump until he reaches the other side of the group. Stop and hold this position.

In order for the students to understand that the plant root takes minerals and plant food from the soil particles, water and air from the open space, and anchors the plant growing above, ask questions such as: What does the plant need to grow? Where does it get it from? How else is the soil important to the plant? The individual animals now move about through the open spaces finding food, shelter, and water. (Bacteria, molds, and other small creatures are included in the term—animals.) Following further discussion whereby the students express their experience by talking, ask them to demonstrate how the plant root and ani-

mals would move through soil which is entirely sand and soil which is entirely clay. Possible questions which could be asked include: What differences do you notice between sand and clay? Do you think plants and animals could survive very easily in soil which is entirely sand or entirely clay?

At another time, repeat the above activity and ask, "What happens when rain falls on the soil?" Some runs off the soil surface, some evaporates back into the air, and the remainder passes through or is held in the soil pore spaces between the soil particles. Explain that when water runs off, it may carry soil particles away (erosion). Repeat the game above and emphasize what happens if a building, highway, or other solid covering is placed on this soil. What may happen to the pore space? (Move closer together.) What happens to water and air? (It decreases.) What

happens to the plant roots and animals living in the soil? (They may disappear.)

Repeat the soil game and emphasize what happens if grass or other vegetation is planted on bare soil. (Soil pore spaces become larger, more roots grow, and the soil will hold more water and air.)

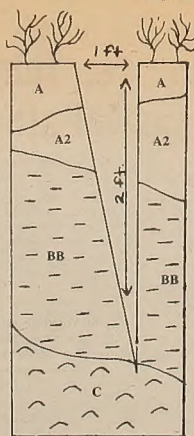
The "Soil Game" was originally prepared by the Arizona Department of Education, and appeared in the publication "Elementary Teachers Resource Guide for Environmental Education."

Further Studies

The study of a soil profile can also be undertaken by children at the primary/intermediate level.

Procedure: Use a spade to dig a hole 12 to 24 inches deep depending on the thickness of the upper layers. Try to make one side of the hole as straight as possible.

A Typical Soil Profile



A Top soil layer, dark brown in color (several inches)

A2 Zone of leaching, light brown in color

BB Zone of accumulation, reddish-brown in color (several inches - several feet)

C Parent material, grey brown in color

1. Allow students to look at the hole you have made and ask questions such as: Does the color of the soil change the deeper you dig? Does it feel the same as you dig deeper? Does it look the same as you dig deeper? How far down do the roots grow? Do you think that all soil profiles look the same? Why?

Arts and Crafts

Following a discussion of a soil profile, ask students to construct one of their own. This can be done by using cardboard, various kinds of soil, twigs, leaves, etc.

The following chart may assist students at the primary/intermediate level to determine soil types.

CHARACTERISTIC	SAND	CLAY	LOAM
Color	light	medium	dark
Grain Size	large	tiny	medium
Humus* Content	slight (if any)	moderate	rich
When rolled through your fingers, it feels	rocky	dry: hard & plastic—wet: stiff & sticky	gritty
Speed of water flow allowed by the sample	straight through	allows very little, if any	moderate to slow

* Humus is the black or dark substance in soils formed by the decay of vegetable or animal matter that provides food for plant life.

York-Durham project on schedule



A construction worker (above) crouches on a 10-foot concrete pipe to guide a back hoe excavating for the next section of the 70-mile York Durham trunk sewer. He stands (right) to lower the new pipe length into place. Phase 1 of the new sewage system serving the regions of York and Durham is scheduled for completion in 1980.

(photos: John Girardo)

Wintario provides funds for environmental studies

The impact of chlorinated and aromatic hydrocarbons and on airborne mercury on the environment and on the job are subjects of two studies starting immediately and funded through the Provincial Lottery Trust Fund, Ontario Environment Minister George McCague announced.

A third study, also funded by Wintario, is designed to develop accurate techniques to determine potential cancer causing activity by certain organic compounds.

All three projects, estimated to cost \$856,000, fall under Environment Ontario's Hazardous Substances Program. Mr. McCague said. The research programs are to pin-point substances which could potentially cause problems and to ensure adequate controls on the release of these materials to the environment.

In the hydrocarbons study Acres Consulting Services of Niagara Falls has contracted to undertake a Province-wide location and emission inventory for specified chlorinated and aromatic hydrocarbons and to obtain complete documentation of these potentially hazardous substances. After the inventory is completed in March 1979, means and standards for monitoring, source testing and abatement activities will be established.

The 15 specified hydrocarbons are used by several industries and

have the potential for significant health impact.

The study of atmospheric mercury deposition in Ontario will be conducted by the Ontario Research Foundation. It is expected to establish whether the high concentration of methylmercury found in certain remote Ontario lakes is due to transport of the material by air.

In the third study York University scientists will attempt to determine which chemicals or com-

bination of chemicals are responsible for any biological or mutagenic activity. These three new studies are part of 14 health-related environmental projects now under way or approved and financed by lottery money. Other studies with similar funding are expected to be announced later. Projects are selected by Environment Ontario's Research Advisory Committee which maintains liaison with the Ministries of Health and Labour.

US bans aerosols

The Food and Drug Administration, the Environmental Protection Agency and the Consumer Product Safety Commission in the US have announced that they will ban 98 per cent of chlorofluorocarbon-based aerosols on December 15 of this year. As of October 15, 1978, the bulk production of these chemicals for non-essential uses will be banned, followed on April 15, 1979, by a ban on the shipment of such products between states.

While sales of aerosol products have dropped by 40 per cent over the past three years, the industry has already converted many of its products to alternative innocuous propellants.

Excluded from the ban are some

drugs used in medical treatment, and certain insecticides. The use of chlorofluorocarbons as refrigerants remains unregulated.

The ban is expected to reduce the consumption of the chemical to such an extent that any effect they might have on the ozone layer will be greatly reduced.

In 1977, Environment Canada negotiated with the industry a voluntary reduction of the use of chlorofluorocarbons to 50 per cent of the 1974 level. This reduction has been achieved. In addition, a regulation will be published this year that will ban, effective April 1979, the use of chlorofluorocarbons F11 and F12 in personal use products, as deodorants, etc.

Guidelines set for waste oil use

Though Environment Ontario has been advised that the low levels of PCB detected in waste oil pose no immediate or direct risk to health, concern with long-term implications of the overall burden of PCB in the environment induced Ontario Environment Minister George McCague to establish interim guidelines for the three major uses of waste oil in Ontario.

For waste oil intended for use on roads the guideline is 25 parts per million of PCB. Waste oil collectors using such oil must make samples of the material available to the Ministry, and must be prepared to submit a certified PCB analysis of the oil in storage by Spring 1979.

For waste oil which is re-refined

or used in the manufacture of chemical specialty products the guideline has been set at 25 ppm of PCB.

In industrial fuel processes the interim guideline has been set at 100 ppm. In addition, this application requires Environment Ontario approval after a thorough examination. In announcing the new guidelines Mr. McCague pointed out, that his Ministry is exercising extreme caution in their formulation. The US Environmental Protection Agency, for example, has adopted a standard of 500 ppm of PCB as a definition of PCB and PCB waste mixtures under the US Toxic Substances Control Act, compared to the Environment Ontario guideline of 25 ppm.

Environmental studies manual

A manual containing a description and activity outline for many of the sessions offered at the Special Education Workshop has been compiled by the Ministry of the Environment.

This 165-page book entitled, "Environmental Studies for Special Education Teachers" will be available in September for \$1.00 from the following address:

The Ontario Government Bookstore,
880 Bay Street,
Toronto, Ontario
M5S 1Z8



Looking back at the Waste Conference



Photos from Environment Ontario's files, show Dr. Matthew Dymond, former Ontario Minister of Health, addressing the annual banquet in Niagara Falls in 1967 (upper left); Tom Armstrong and Betty Mills of Environment Ontario chatting between sessions at the 1974 conference (upper right); a delegate raising a question from the floor at the 1974 conference (lower right); and Dave Caverly, conference chairman from 1963 to 1973 at the 1974 conference.



Land sacrifice intolerable — McCague

People will no longer tolerate the permanent sacrifice of land, Environment Minister George R. McCague recently told the Canadian Land Reclamation Association in Sudbury.

Addressing the association's third annual meeting, Mr. McCague said as recently as 15 years ago, both government and industry often ignored reclamation of land as an environmental factor in development.

"At the Ministry of the Environment, the approvals process for proposed industrial development recognizes the ability to reclaim land as a major criterion of environmental acceptability. The philosophy of respect for land and care for its future is expressed most clearly in Ontario's Environmental Assessment Act." The Act prescribes a preventive medicine approach for development by assessing all of the social, economic, and environmental implications before any ground is broken or construction begins. In terms of land reclamation, the environmental assessment process acknowledges that the first step in restoration should come before, not after the fact.

As an example of the new

philosophy of land reclamation, Mr. McCague mentioned the Onakawana lignite mining project and its assessment as the first strip mine in Ontario.

"Under the authority of The Environmental Assessment Act, we have instructed the proponent to prepare environmental assessment documents for the entire

scheme, and in the key area of tailing disposal we are asking this: show us the area can be restored, at least to the condition in which you found it. If the assessment fails to provide the necessary answer, the project fails. If the assessment succeeds in this, then the project can't help but succeed," Mr. McCague concluded.

AWWA award for Ken Sharpe



Environment Ontario's deputy minister K.H. Sharpe has been chosen by the American Water

Works Association (AWWA) to receive the George Warren Fuller Award at the association's annual meeting held on June 26 in Atlantic City.

An association spokesman announced that the award has been voted to Mr. Sharpe for his outstanding contributions in the water works field as chairman of the Canadian Section of the AWWA, for his continuing support of the Ontario Section and for his outstanding service to the province of Ontario in the water works industry.

Mr. Sharpe has been member of the AWWA for 30 years. He was chairman of the Canadian Section in 1968/69.

OPAC finances pesticides research

Ontario's Pesticides Advisory Committee has, for the first time, provided funds for several research projects aimed at the improvement of pest control in this Province. Environment Ontario Minister George McCague announced at the annual conference of the Canadian Pest Control Association, held recently in Toronto.

One of these projects involves the study, at the University of Toronto, of nerve induction velocity. The principal aim of this study is to investigate long-term effects of exposure to pesticides on the applicator.

In a second study, the University of Guelph is investigating in

detail the biology of termites in our climate. "I expect that this study will help us to find a chink in the armor of the insect's lifecycle that will enable us to apply better methods of control," Mr. McCague said.

Two other studies, also financed by the Ministry and conducted at the University of Guelph and at the University of Ottawa, concern the use of avicides, especially Avitrol. Although these studies are not yet completed, sufficient data have been collected to allow the reclassification of Avitrol. The regulation pertaining to its use is now being redrafted and will soon be placed before the regulation committee of the Ontario Legislature.



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